Edd Clark & Associates, Inc.
Environmental Consultants

May 16, 2006
Job No.: 0255,003.97

Ms. Shelly Ocana
Executor of the Estate of Herschel McGuire
% Ms. Maisie McCarty
Law Offices of Kelly Jackson Christianson & Smith
100 B Street, Suite 430
Santa Rosa, CA 95401

Groundwater Monitoring Report - December 2005 Event
312 and 336 West College Avenue
Santa Rosa, California

Dear Ms. Ocana:

Please accept this as Edd Clark & Associates, Inc.'s (EC&A's) report of the December 14, 2005 groundwater monitoring conducted at 312 and 336 West College Avenue (site) in Santa Rosa, California (Figure 1). Groundwater monitoring is being conducted at the site at the request of the North Coast Regional Water Quality Control Board (NCRWQCB) because of a release of fuel hydrocarbons (FHCs) to the subsurface from underground storage tanks (USTs) for gasoline formerly located at the site. Work performed for this event included measuring depth to water (DTW) in MW-4, MW-5 and MW-6 (Figure 2); collecting groundwater samples for chemical analysis from monitoring wells MW-4 and MW-5; calculating groundwater-flow direction and gradient; evaluating the results of the analyses and calculations; and preparing this report. A copy of this report will be sent to the NCRWQCB for their review.

There are three monitoring wells at the site: MW-4, MW-5 and MW-6. MW-1 was destroyed during a 1996 over-excavation, and MW-2 and MW-3 were destroyed on September 15, 2005 because they were screened in what appears to be a perched groundwater zone that produces very little water and is not representative of groundwater quality in the vicinity of the former USTs. Currently, MW-4 and MW-5 are sampled quarterly and MW-6 is sampled semi-annually during seasonally high and low groundwater levels.

Groundwater-level Measurements
On December 14, 2005, EC&A personnel measured DTW in monitoring wells MW-4, MW-5 and MW-6. DTW below the top of well casing (TOC) in each well was measured to the nearest 0.01 foot (ft) with a water-level meter. The meter was cleaned and rinsed prior to taking measurements in each well. DTW was recorded after the well caps were removed and groundwater in the wells was allowed to equilibrate for a minimum of 15 minutes. DTW in MW-4, MW-5 and MW-6 was 8.41 ft, 6.83 ft and 7.84 ft, respectively, and the groundwater-flow direction and gradient were N30°W and 0.037 ft/ft, respectively (Figure 3 and Table 1).

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Groundwater Field Logs containing DTW measurements are in Appendix A. DTW data will be electronically submitted to the State GeoTracker Internet Database.

Groundwater Sampling Procedures

On December 14, 2005, EC&A personnel collected groundwater samples from MW-4 and MW-5. Prior to collecting samples, the wells were purged with a submersible pump and checked for the presence of free-floating product. Free-floating product was not observed in any of the purged water; however, a mild odor of FHCs was detected while purging groundwater from MW-4. Groundwater pH, temperature, electric conductivity and oxidation-reduction potential (ORP) were measured during purging at intervals of approximately one well-casing volume. Groundwater samples were collected after groundwater parameters stabilized and the water level returned to a minimum of 80% of the initially recorded water level. Purge volumes and groundwater quality parameter measurements are recorded on the Field Logs in Appendix A.

Groundwater samples were collected in new single-sample, disposable bailers fitted with disposable bottom-emptying devices to minimize water degassing. The samples were transferred from the bailers to properly labeled, laboratory-supplied sterile sample containers, placed on ice and transported under chain-of-custody control to McCampbell Analytical, Inc. (MAI) for the required analyses. MAI is a State-certified laboratory located in Pacheco, California.

Decontamination Procedures

Sampling equipment was cleaned onsite with a low-phosphorous soap and water solution and double rinsed with tap water. Decontamination water and monitoring well purge water were placed in properly labeled, DOT 17H 55-gallon drums for temporary, onsite storage.

Groundwater Sample Analysis and Analytical Results

All groundwater samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline (g) and benzene, toluene, ethylbenzene and xylenes (BTEX) by Analytical Methods SW8015Cm/8021B.

TPHg and BTEX were detected in the groundwater sample collected from MW-4 at concentrations of 670 micrograms per liter (µg/l), 70 µg/l, 10 µg/l, 6.1 µg/l and 10 µg/l, respectively. In the groundwater sample collected from MW-5, TPHg, benzene, toluene and xylenes were detected at concentrations of 81 µg/l, 6.4 µg/l, 0.88 µg/l and 1.4 µg/l, respectively.

The results of analyses of groundwater samples from the monitoring wells are presented in Table 2 and on Figure 3. A complete copy of the analytical laboratory report is in Appendix B. Groundwater sample analytical results will be electronically submitted to the State GeoTracker Internet Database.

Discussion

Groundwater-flow direction at the site continues to be to the northwest, ranging from N14°W to N36°W (Figure 3). DTW below TOC has ranged from 5.06 ft (MW-3, January 1995) to 9.93 ft (MW-4, August 2004). Historic DTW measurements done prior to August 2004 are presented in Table 2.

Historically, the highest concentrations of FHCs have been detected in groundwater samples from MW-4, which is located down-gradient from the former UST locations. Between September of 1997 and December of 2005, TPHg and benzene concentrations in MW-4 have decreased from 9800 µg/l and 1700 µg/l, respectively, to 670 µg/l and 70 µg/l, respectively. Between February of 2001 and December of 2005, TPHg and benzene concentrations in MW-5 have decreased from 4000 µg/l and 210 µg/l, respectively, to 81 µg/l and 6.4 µg/l, respectively. In MW-6, concentrations of TPHg have been below detection limits since February of 2003; concentrations of benzene have been below detection limits since August of 2003. Since February 2003, trace concentrations of toluene, ethylbenzene and xylenes have been detected sporadically in MW-6.

Since 2003, significant fluctuations in FHC concentrations in MW-4 and MW-5 have occurred in concert with fluctuations in DTW. FHC concentrations peak during the wet season and are at their minimum during the dry season. Between September and December of 2005, FHC concentrations in MW-4 and MW-5 increased at the same time that the water levels increased. Presumably, these fluctuations reflect the depth to the bottom of the smear zone, which is at about 7- to 8-ft below ground surface (bgs) in MW-4 and 6- to 7-ft bgs in MW-5. Figure 4 is a time-series plot of TPHg and benzene concentrations and DTW in MW-4 and MW-5 that illustrates the relationship between DTW and FHC concentrations.

Recommendations

The bio-sparge system at the site was activated on April 27, 2006. MW-4, MW-5 and MW-6 should be sampled quarterly for at least one year. Groundwater samples should continue to be analyzed for TPHg and BTEX by Analytical Methods SW8021B/8015Cm. In addition to measuring groundwater pH, temperature and electrical conductivity, dissolved oxygen (DO) and oxidation-reduction potential (ORP) should be measured and recorded during each quarterly event. The biosparge system should be checked weekly through May 2006 and monthly thereafter.

Schedule

The next sampling event is scheduled for the end of May 2006.

Limitations

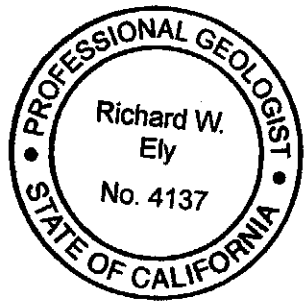
The conclusions presented in this report are professional opinions based on the information presented herein, which includes data generated by others. Whereas EC&A does not guarantee the accuracy of data supplied by third parties, we reserve the right to use this data in formulating our professional opinions. This report is intended only for the indicated purpose and project site. Conclusions and recommendations presented herein apply to site conditions existing at the time of our study. Changes in the conditions of the site property can occur with time because of natural processes or the works of man on the site or adjacent properties. Changes in applicable standards can also occur as the result of legislation or from the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond our control.

Thank you for allowing EC&A to provide environmental services for you. Please call John Calomiris, project manager, if you have any questions.

Very truly yours,

Etta Jon VandenBosch
Environmental Scientist

Richard Ely, PG #4137
Senior Geologist



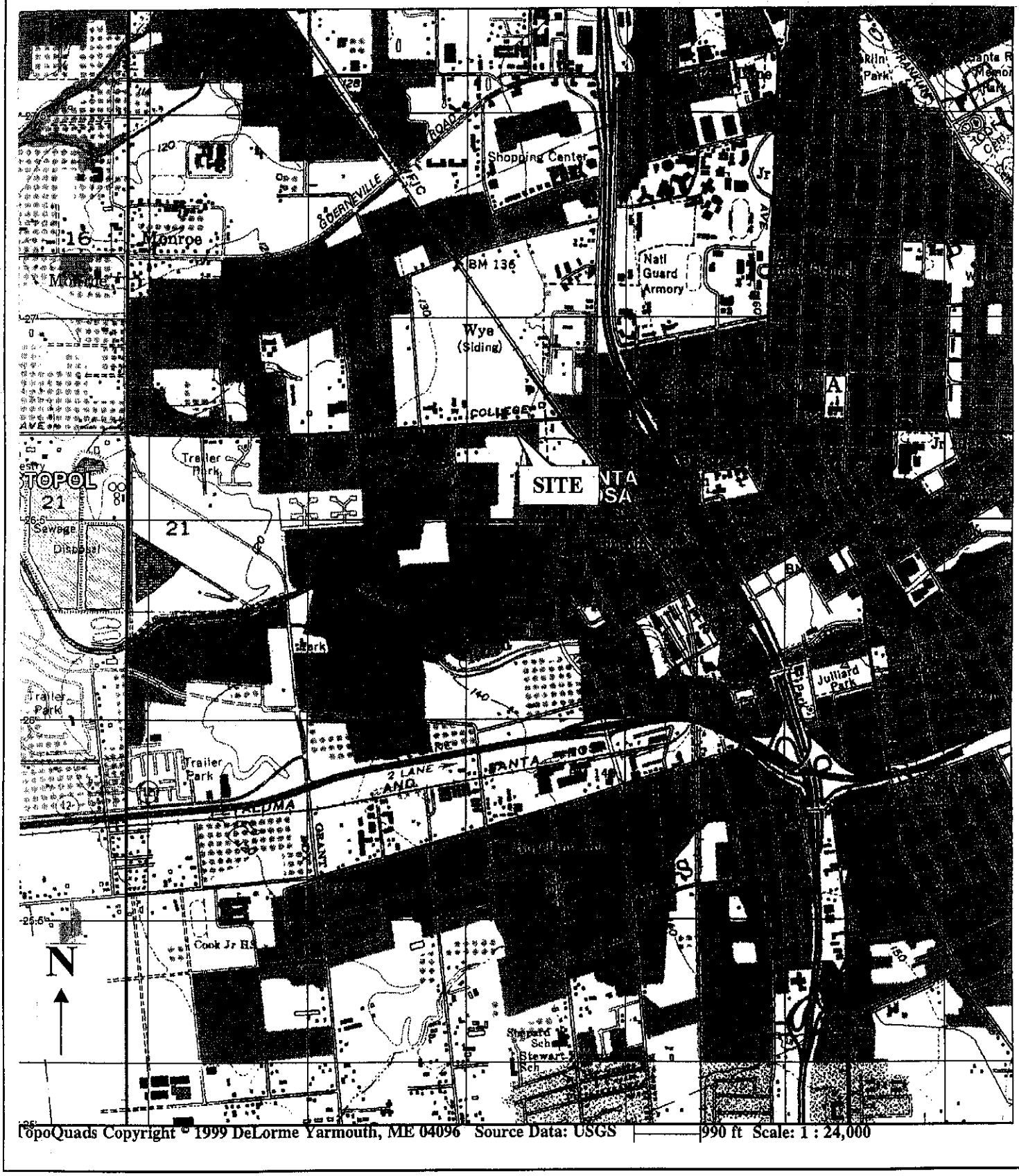
Attachments: Figure 1 - Site Location Map
Figure 2 - Site Plan
Figure 3 - Groundwater Elevation Map with Sample Analyses, 14 December 2005
Figure 4 - Time-Series Graphs of TPHg and Benzene Concentrations in Monitoring Wells MW-4 and MW-5

Table 1 - Groundwater Elevation Data
Table 2 - Analytical Results - Groundwater Samples from Monitoring Wells

Appendix A - Groundwater Field Logs
Appendix B - Analytical Laboratory Report

cc: Joan Fleck, North Coast Regional Water Quality Control Board

0255\QMR Dec05



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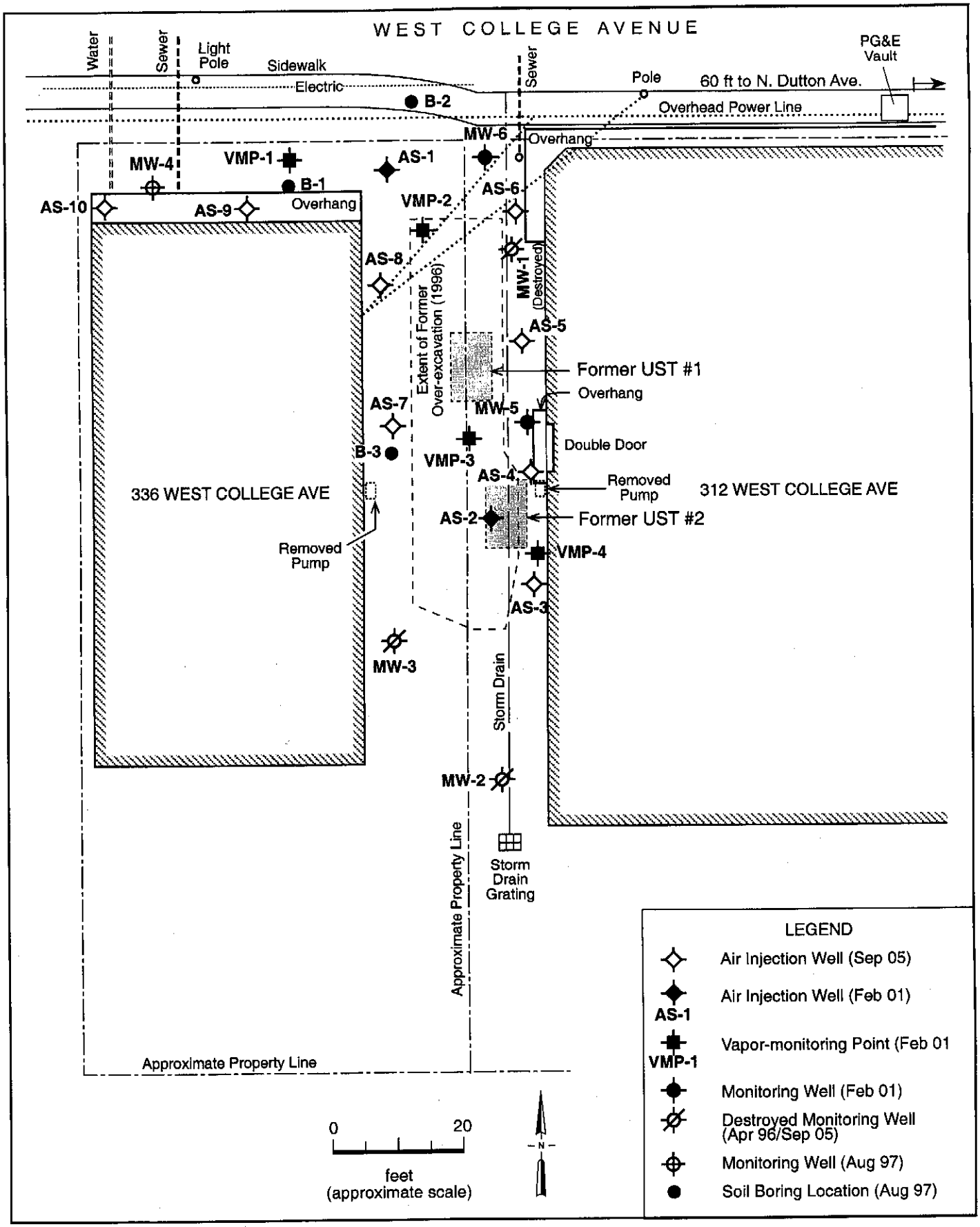
Site Location Map
312 and 336 West College Ave.
Santa Rosa, California

FIGURE
1

JOB NUMBER	REVIEWED BY:	DATE:	REVISED DATE:
0255,003.95	Lori Brown	February 2003	



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SITE PLAN

312/336 West College Avenue
Santa Rosa, California

FIGURE
2

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0255,003.97	EC&A, E.J. VandenBosch	April 2000	December 2005	1 of 1

(TRACE #397/RG/06Dec05)

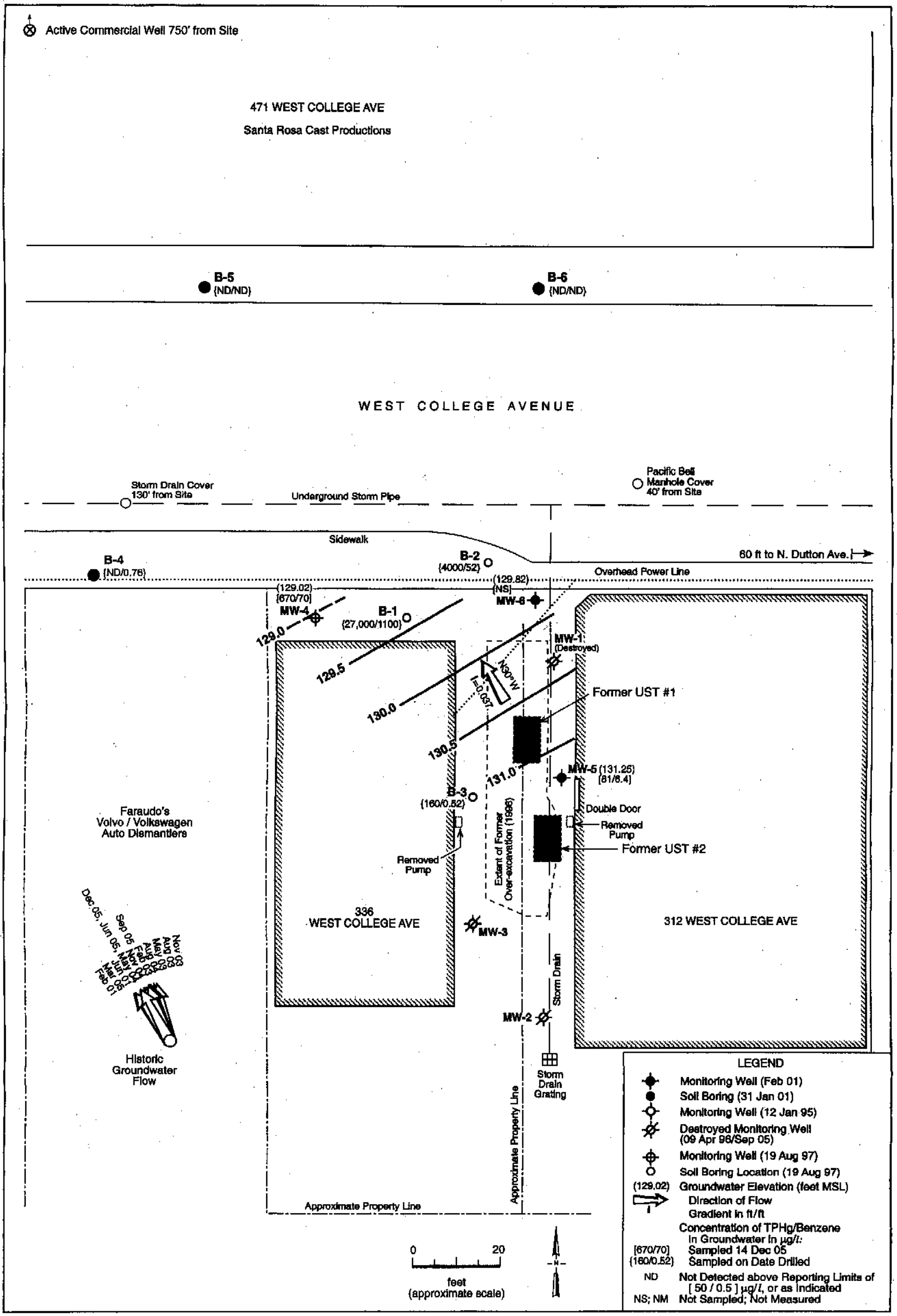

FIGURE 3

SHEET NO. 1 of 1

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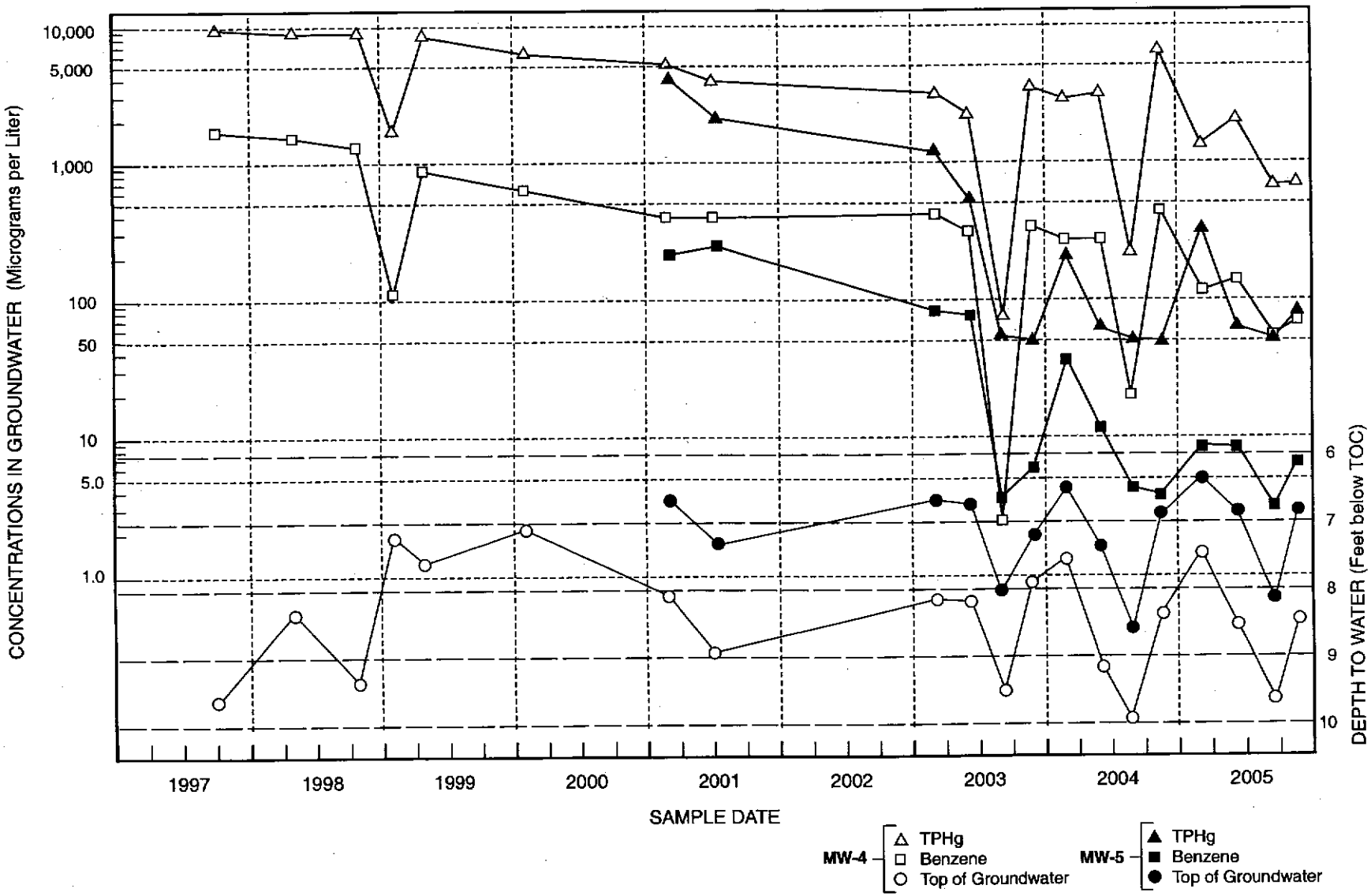
GROUNDWATER ELEVATION MAP
with Sample Analyses, 14 December 2005
312/336 West College Avenue
Santa Rosa, California

FIGURE 3

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0255.003.97	EC&A, E.J. VandenBosch	April 2000	March 2006	1 of 1

TRACE #367/FIG/29Mar06



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TIME SERIES GRAPHS OF TPHg AND BENZENE CONCENTRATIONS in Monitoring Wells MW-4 and MW-5

312/336 West College Avenue
Santa Rosa, California

FIGURE 4

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0255,003.97	EC&A, E.J. VandenBosch	October 2004	March 2006	1 of 1

(TRACE #397/RG/04Apr06)

Table 1. Groundwater Elevation Data
312 & 336 West College Avenue, Santa Rosa, California

Well ID	Date	TOC Elevation (feet)	DTW (feet)	Groundwater Elevation (feet)
MW-2	02/05/01	137.48	5.56	131.92
MW-3		137.45	6.08	131.37
MW-4		137.43	8.08	129.35
MW-5		138.08	6.70	131.38
MW-6		137.66	7.61	130.05
Gradient = N 29°W, 0.035 ft/ft				
MW-2	06/12/01	137.48	6.21	131.27
MW-3		137.45	6.54	130.91
MW-4		137.43	8.93	128.50
MW-5		138.08	7.30	130.78
MW-6		137.66	8.41	129.25
AS-1		---	8.88	---
AS-2		---	7.18	---
Gradient = N 25°W, 0.040 ft/ft				
MW-2	02/04/03	137.48	5.43	132.05
MW-3		137.45	6.08	131.37
MW-4		137.43	8.15	129.28
MW-5		138.08	6.68	131.40
MW-6		137.66	7.88	129.78
Gradient = N 19°W, 0.042 ft/ft				
MW-2	05/12/03	137.48	5.47	132.01
MW-3		137.45	6.13	131.32
MW-4		137.43	8.21	129.22
MW-5		138.08	6.75	131.33
MW-6		137.66	7.94	129.72
Gradient = N 19°W, 0.040 ft/ft				

Table 1. Groundwater Elevation Data
312 & 336 West College Avenue, Santa Rosa, California

Well ID	Date	TOC Elevation (feet)	DTW (feet)	Groundwater Elevation (feet)
MW-2	08/22/03	137.48	6.24	131.24
MW-3		137.45	6.88	130.57
MW-4		137.43	9.50	127.93
MW-5		138.08	8.03	130.05
MW-6		137.66	9.35	128.31
Gradient = N 15°W, 0.043 ft/ft				
MW-2	11/10/03	137.48	NM	---
MW-3		137.45	NM	---
MW-4		137.43	7.90	129.53
MW-5		138.08	7.20	130.88
MW-6		137.66	7.90	129.76
Gradient = N14°W, 0.018 ft/ft*				
MW-2	02/06/04	137.48	NM	---
MW-3		137.45	NM	---
MW-4		137.43	7.58	129.85
MW-5		138.08	6.50	131.58
MW-6		137.66	7.34	130.32
Gradient = N14°W, 0.018 ft/ft				
MW-2	05/26/04	137.48	NM	---
MW-3		137.45	NM	---
MW-4		137.43	9.14	128.29
MW-5		138.08	7.36	130.72
MW-6		137.66	8.65	129.01
Gradient = N26°W, 0.03 ft/ft				

Table 1. Groundwater Elevation Data
312 & 336 West College Avenue, Santa Rosa, California

Well ID	Date	TOC Elevation (feet)	DTW (feet)	Groundwater Elevation (feet)
MW-2	08/17/04	137.48	NM	---
MW-3		137.45	NM	---
MW-4		137.43	9.93	127.50
MW-5		138.08	8.58	129.50
MW-6		137.66	9.74	127.92
Gradient = N18°W, 0.026 ft/ft				
MW-2	11/15/04	137.48	5.77	131.71
MW-3		137.45	6.31	131.14
MW-4		137.43	8.35	129.08
MW-5		138.08	6.90	131.18
MW-6		137.66	7.88	129.78
Gradient = N24°W, 0.037 ft/ft				
MW-4	03/03/05	137.43	7.46	129.97
MW-5		138.08	6.36	131.72
MW-6		137.66	6.95	130.71
Gradient = N36°W, 0.028 ft/ft				
MW-4	06/02/05	137.43	8.51	128.92
MW-5		138.08	6.84	131.24
MW-6		137.66	7.90	129.76
Gradient =N30°W, 0.04 ft/ft				
MW-4	09/16/05	137.43	9.59	127.84
MW-5		138.08	8.12	129.96
MW-6		137.66	9.24	128.42
Gradient = N22°W, 0.039 ft/ft				
MW-4	**12/14/05**	**137.43**	**8.41**	**129.02**
MW-5		**138.08**	**6.83**	**131.25**
MW-6		**137.66**	**7.84**	**129.82**
Gradient = N30°W, 0.037 ft/ft				

Notes

The top of well casings for MW-5 and MW-6 were surveyed on March 13, 2001, by David L. Contreras, a State-licensed surveyor, to mean sea level and horizontal distance using the benchmark used previously for MW-4. Prior to 2005, water levels from MW-2 and MW-3 were not used to calculate groundwater flow direction and gradient because these wells were installed to a shallower depth than the other wells and are screened within what appears to be a perched water- producing zone that produces very little water. MW-1 was destroyed during 1996 over-excavation. MW-2 and MW-3 were abandoned on September 15, 2005.

TOC: Top of casing elevation relative to mean sea level
DTW: Depth to water from ground surface
NM: Not measured
*: An error in the map scale shown on previous Site Plans/Groundwater Elevation Maps was discovered in 2003. The accuracy of previously reported groundwater-flow directions is not affected; however; scale is relevant to gradient calculations. Gradients calculated prior to November 2003 are too high because the scale was too small (1" = 30" instead of 1" = 20"). The new base map has been enlarged to 1" = 20'.

Table 2. Analytical Results - Groundwater Samples from Monitoring Wells 312 & 336 West College Avenue, Santa Rosa, California

Sample ID	Date	DTW ft bgs	TPHg µg/l	MTBE µg/l	Benzene µg/l	Toluene µg/l	Ethyl-benzene µg/l	Xylenes µg/l
MW-1 (1)	01/18/95 V	6.43	6500	NA	6.7	1.3	0.5	100
	01/23/96	6.60	ND<50	NA	1.6	ND<0.5	ND<0.5	ND<0.5
MW-2 (2)	01/18/95 V	5.52	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	01/23/96	5.69	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MW-3 (2)	01/18/95 V	5.06	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	01/23/96	5.16	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MW-4	09/02/97	9.63	9800 a	ND<210	1700	90	250	240
	04/23/98	8.34	9000 a	ND<5**	1500	69	290	100
	10/14/98	9.36	9000 a	ND<5**	1300	100	420	250
	01/20/99	7.22	1700 a	ND<40*	110	7.2	92	39
	04/13/99	7.58	8700	ND<570*	880	43	250	150
	01/18/00	7.06	6100 a	150*	620	94	90	190
	02/05/01 (3)	8.08	5100 a	ND<20*	390	46	82	81
	06/12/01	8.93	3900 a	ND<30*	390	28	63	46
	02/04/03	8.15	3100 a	ND<0.5 †	400	30	77	60
	05/12/03	8.21	2200 a	NA	300	18	46	25
	08/22/03	9.5	75 a	NA	2.5	1.4	ND<0.5	ND<0.5
	11/10/03	7.90	3600 a	ND<84*	340	23	59	47
	02/06/04	7.58	2900 a	NA	270	13	53	29
	05/26/04	9.14	3200 a	NA	270	27	54	29
	08/17/04	9.93	210 a	NA	20	0.99	1.6	1.6
	11/15/04	8.35	6500 a	NA	430	24	43	45
	03/03/05	7.46	1400 a	NA	120	6.5	21	12
	06/02/05	8.51	2000 a	NA	140	13	21	14
	09/16/05	9.59	660 a	ND<5.0	54	5.5	4.2	6.7
	12/14/05	**8.41**	**670 a**	**NA**	**70**	**10**	**6.1**	**10**

Table 2. Analytical Results - Groundwater Samples from Monitoring Wells 312 & 336 West College Avenue, Santa Rosa, California

Sample ID	Date	DTW ft bgs	TPHg µg/l	MTBE µg/l	Benzene µg/l	Toluene µg/l	Ethyl-benzene µg/l	Xylenes µg/l
MW-5	02/05/01 [3]	6.70	4000 [a]	ND<20*	210	56	220	590
	06/12/01	7.30	2100 [a]	ND<5*	250	9.2	170	50
	02/04/03	6.68	1200 [a]	ND<0.5 [†]	80	9.7	88	110
	05/12/03	6.75	530 [a]	NA	76	3.1	28	33
	08/22/03	8.03	54 [a]	NA	3.6	ND<0.5	0.59	1.3
	11/10/03	7.20	ND<50	ND<5.0*	6.0	0.51	1.9	1.6
	02/06/04	6.50	210 [a]	NA	36	1.4	23	5.0
	05/26/04	7.36	62 [a]	NA	12	ND<0.5	0.90	0.69
	08/17/04	8.58	ND<50	NA	4.2	ND<0.5	0.90	1.7
	11/15/04	6.90	ND<50	NA	3.9	ND<0.5	0.89	0.72
	03/03/05	6.36	310 [a]	NA	8.2	0.57	12	10
	06/02/05	6.84	61 [a]	NA	8.2	0.78	1.7	1.9
	09/16/05	8.12	51 [a]	ND<5.0	3.1	ND<0.5	0.85	2.2
	12/14/05	**6.83**	**81 [a]**	**NA**	**6.4**	**0.88**	**ND<0.5**	**1.4**
MW-6 [4]	02/05/01 [3]	7.61	680 [a]	ND<5*	7.2	2.2	32	19
	06/12/01	8.41	340 [a]	ND<5*	3.5	2.7	12	2.5
	02/04/03	7.88	ND<50	ND<0.5 [†]	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	05/12/03	7.94	ND<50	NA	0.72	ND<0.5	ND<0.5	0.53
	08/22/03	9.35	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	0.58
	11/10/03	7.90	ND<50	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02/06/04	7.34	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	05/26/04	8.65	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	08/17/04	9.74	ND<50	NA	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	03/03/05	6.95	ND<50	NA	ND<0.5	ND<0.5	0.56	ND<0.5
	09/16/05	9.24	ND<50	ND<5.0	ND<0.5	1.1	0.56	2.4

Notes:
DTW: Depth to water in feet below ground surface (ft bgs)
TPHg: Total petroleum hydrocarbons as gasoline
MTBE: Methyl tert-butyl ether
µg/l: Micrograms per liter

Notes, continued:

ND: Not detected above the reporting limit†
NM: Not measured
NA: Not analyzed
NS: Not sampled
V: Samples collected by VHC
a: Unmodified or weakly modified gasoline is significant
*: Sample analyzed for MTBE by EPA Method 8020. Positive result on 1/18/00 probably is due to interference by high concentrations of TPHg
**: MTBE and other gasoline oxygenates analyzed by Analytical Method SW8260B; none were detected
†: MTBE and other gasoline oxygenates and the lead scavengers 1,2-dibromoethane (EDB) and 1,2-dichloroethane (1,2-DCA) analyzed by Analytical Method SW8260B; none were detected
(1): MW-1 was destroyed during 1996 over-excavation
(2): Monitoring of MW-2 and MW-3 was discontinued because they are screened in a perched aquifer; the wells were abandoned on September 15, 2005.
(3): Samples were also analyzed for dissolved ferrous iron; all results were ND
(4): MW-6 is sampled semi-annually during seasonally high and low groundwater levels.

Appendix A

Groundwater Field Logs

DAILY FIELD RECORD

Page 1 of _____

Project and Task Number: 0255	Date: 12/14/05
Project Name: West College	Field Activity: Groundwater Monitoring
Location: 312 3336 West College Ave	Weather: Partly Cloudy / Calm
Time of OVM Calibration:	

PERSONNEL

Name	Company	Time In	Time Out
C. Hute	EC+A		

DRUM ID	DESCRIPTION, CONDITION AND QUANTITY	LOCATION
7	4 decon water 1 Drill cuttings	Back Behind Central
	2 Purge water	Building

TIME	DESCRIPTION OF WORK PERFORMED	
	Load ORDER 6, 5, 4	
	Depart	
	onsite, open all wells	MW-4 8.41
	Set up Decon	MW-5 6.83
	TAKE DTW's	MW-6 7.84
	Calc GWF logs	
	Begin purging wells in order	
	Allow time for Recharge	
	TAKE post Purge DTW's	
	Begin Sampling wells in order	
	Close and lock all wells	
	Clean up Site	
	Depart	

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FIELD LOG

☒ GROUNDWATER	☐ SURFACE WATER	☐ DOMESTIC WATER	☐ IRRIGATION WATER	☐ WELL DEVELOPMENT

Project No: 0255	Field point name: MW-4
Global ID: T060 9700681	Well depth from TOC: 20
Project location: 312 3336 West College Ave	Well diameter: ☒ 2" ☐ 4 " ☐ 6" ☐ Other:
Date: 12/14/05	Product level from TOC: ND
Time:	Water level from TOC: 8.41
Recorded by: C. Hute	Screened interval: 5-20
Purge time (duration):	Well elevation (TOC): 137.66

WEATHER

Wind: 0 — 2 mph	Precip. in last 5 days: NO

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

☒ 2" well = 0.17 gal/ft 11.59	☐ 6" well = 1.47 gal/ft	Gallons in 1 well volume: 1.97	
☐ 4" well = 0.66 gal/ft	☐ " well = gal/ft	Total gallons removed: 6.0	Well volumes removed: 3

CALIBRATION

Parameter	Time	Calibration	Before Sampling	Time	After Sampling
EC:					

FIELD MEASUREMENTS

Time	pH	EC (x1000)	Temp °F	Case Volumes/ Gallons	Appearance
	6.68	540.6	65.0	1 / 2.0	Orp 42 Low turb Slight Hc odor no Sheen
	6.76	589.3	65.7	2 / 4.0	47
	6.65	623.2	66.4	3 / 6.0	37
				/	

Notes:

Water level after purging below TOC: 80% of original water level below TOC: yes

Water level before sampling below TOC: 8.47

Appearance of sample: Time: 3:30

☐ Bailer:	Type:	GPM:	☒ Pump: ES-10	Type: Submersible	GPM: 1-2
☐ Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse		

Sample analysis:	☒ TPHg	☐ TPHd	☐ TPH	☒ BTEX	☐ 7 oxygenates	☐ Lead scavengers	☐ VOCs	☐ Nitrates
EPA Method:								

Other:

LABORATORY: ☒ McCampbell Analytical ☐ Other:

EDD CLARK & ASSOCIATES, INC.
ENVIRONMENTAL CONSULTANTS

FIELD LOG

☒ GROUNDWATER	☐ SURFACE WATER	☐ DOMESTIC WATER	☐ IRRIGATION WATER	☐ WELL DEVELOPMENT

Project No: 0255	Field point name: MW-5
Global ID: T060 9700681	Well depth from TOC: 20'
Project location: 312-3336 West College Ave	Well diameter: ☒ 2" ☐ 4" ☐ 6" ☐ Other:
Date: 12/14/05	Product level from TOC: ND
Time:	Water level from TOC: 6.83
Recorded by: C. Hute	Screened interval: 5-20
Purge time (duration):	Well elevation (TOC): 138.08

WEATHER

Wind: 0 – 2 mph	Precip. in last 5 days: NO

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

☒ 2" well = 0.17 gal/ft 13.17	☐ 6" well = 1.47 gal/ft	Gallons in 1 well volume: 2.24	
☐ 4" well = 0.66 gal/ft	☐ " well = gal/ft	Total gallons removed: 6.6	Well volumes removed: 3

CALIBRATION

Parameter	Time	Calibration	Before Sampling	Time	After Sampling
EC:					

FIELD MEASUREMENTS

Time	pH	EC (x1000) µS	Temp °F	Case Volumes/ Gallons	ORP	Appearance: Low Turb no odor no sheen
	6.59	715.8	64.9	1 / 2.2	62	
	6.67	732.3	67.3	2 / 4.4	60	
	6.74	736.8	68.0	3 / 6.6	47	
				/		

Notes:

Water level after purging below TOC:	80% of original water level below TOC: yes
Water level before sampling below TOC: 6.87	
Appearance of sample:	Time: 3:20

☐ Bailer:	Type:	GPM:	☒ Pump: ES-40	Type: Submersible	GPM: 1-2
☐ Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse		

Sample analysis:	☒ TPHg	☐ TPHd	☐ TPH	☒ BTEX	☐ 7 oxygenates	☐ Lead scavengers	☐ VOCs	☐ Nitrates
EPA Method:								

Other:

LABORATORY: ☒ McCampbell Analytical ☐ Other:

Appendix B

Analytical Laboratory Report

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Edd Clark & Associates, Inc. 320 Professional Center Ste. 215 Rohnert Park, CA 94928	Client Project ID: #0255	Date Sampled: 12/14/05
		Date Received: 12/15/05
	Client Contact: Cole Hute	Date Reported: 12/21/05
	Client P.O.:	Date Completed: 12/21/05

WorkOrder: 0512291

December 21, 2005

Dear Cole:

Enclosed are:

1). the results of **2** analyzed samples from your **#0255 project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Best regards,

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Edd Clark & Associates, Inc.	Client Project ID: #0255	Date Sampled: 12/14/05
320 Professional Center Ste. 215		Date Received: 12/15/05
Rohnert Park, CA 94928	Client Contact: Cole Hute	Date Extracted: 12/16/05
	Client P.O.:	Date Analyzed: 12/16/05

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0512291

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-4	W	670,a	---	70	10	6.1	10	1	101
002A	MW-5	W	81,a	---	6.4	0.88	ND	1.4	1	106

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water | QC Matrix: Water | WorkOrder: 0512291

EPA Method: SW8021B/8015Cm | **Extraction: SW5030B** | **BatchID: 19457** | **Spiked Sample ID: 0512276-005A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	60	102	101	0.541	103	103	0	70 - 130	70 - 130
MTBE	ND	10	88.8	89.6	0.868	85.4	91.9	7.33	70 - 130	70 - 130
Benzene	ND	10	86.9	93.2	6.94	88.5	94.5	6.57	70 - 130	70 - 130
Toluene	ND	10	88.3	94.3	6.56	90	95.8	6.16	70 - 130	70 - 130
Ethylbenzene	ND	10	91.2	90.7	0.484	92.9	97.5	4.83	70 - 130	70 - 130
Xylenes	ND	30	91	90.7	0.367	95	99.3	4.46	70 - 130	70 - 130
%SS:	105	10	101	106	5.27	98	103	4.45	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 19457 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0512291-001A	12/14/05 3:30 PM	12/16/05	12/16/05 1:57 AM	0512291-002A	12/14/05 3:20 PM	12/16/05	12/16/05 2:30 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

ECAR 05/2291

Edd Clark & Associates, Inc.
Environmental Consultants

Chain of Custody Report

P.O. Box 3039, Rohnert Park, CA 94927
Tel: (707) 792-9500 (800) 474-1448 Fax: (707) 792-9504

E-mail in EDF for Upload to Geotracker: Yes ☒ No ☐ Initials CJ

Samplers Signature: C. Hute

EC&A job # 0255

Global I.D. # T0609700681

Facility Name & Location: 3213336 West College Ave Santa Rosa CA.

Field Point Name	Date	Time	Sample ID (depth)	Sample Type	Media	# of Items	Analysis: TPHg BTEX					Remarks
+ MW-4	12/1/05	3:30		discrete	W	23K	X					
+ MW-5	↓	3:20		↓	↓	~~K~~ 3 2	X					

ICE/t° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
DECHLORINATED IN LAB ____
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB ____
PRESERVATION ✓ (VOAS | O&G | METALS | OTHER)

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
C. Hute	12/5/05	1020			12/15/05	510	Mel Vall
Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0512291 **ClientID: ECAR** **EDF: NO**

Report to:
Cole Hute
Edd Clark & Associates, Inc.
320 Professional Center Ste. 215
Rohnert Park, CA 94928
TEL: (707) 792-9500
FAX: (707) 792-9504
ProjectNo: #0255
PO:

Bill to:
Accounts Payable
Edd Clark & Associates, Inc.
320 Professional Center Ste.215
Rohnert Park, CA 94928

Requested TAT: 5 days
Date Received: 12/15/2005
Date Printed: 12/15/2005

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0512291-001	MW-4	Water	12/14/05 3:30:00	☐	A	A										
0512291-002	MW-5	Water	12/14/05 3:20:00	☐	A											

Test Legend:

1	G-MBTEX_W	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Melissa Valles

Comments: GI# T0609700681

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.